Health outcomes projections of sacubitril/valsartan in the treatment of heart failure in a real-world population in Portugal

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Objectives

- Sacubitril/valsartan is an innovative treatment for patients with symptomatic chronic heart failure with reduced ejection fraction (HFrEF)[1].
- In Portugal, as of September 2019, a total of 10,783 patients were estimated to have already started treatment with sacubitril/valsartan[2].
- This study aims at estimating the projected short term societal impact to the Portuguese society of sacubitril/valsartan treatment in a real-world population of patients already being treated.

Methods

- A Markov model was used to describe HFrEF progression and associated lifetime outcomes[3,4].
- To estimate treatment effects and utilities, the model was calibrated with data from the **PARADIGM-HF** trial[1].
- Baseline population characteristics were adapted to match a real-world population of patients already being treated with sacubitril/valsartan (patients from an observational study conducted in Portugal, **the PRiMe study**) (**Table 1**).
- Outcomes are predicted for the estimated total population of patients being treated with sacubitril/valsartan in Portugal, as of September 2019 (n=10,783)[2].
- It was assumed that the total number of patients treated with sacubitril/valsartan are persistent and that they have the same baseline characteristics as the patients recruited in the PRiMe study.
- Evaluated outcomes are:
  - **hospitalizations** estimated to be avoided;
  - **deaths** estimated to be avoided;
  - **life-years (LY)** estimated to be gained;
  - **quality adjusted life-years (QALY)** estimated to be gained with sacubitril/valsartan *versus* enalapril.
- A 5-year time horizon and a 5% discount rate were considered.

Table 1. Population baseline characteristics from the PRiMe study.

Baseline demographics	
Mean age (years)	71
Female, %	34%

Baseline measurements	
NYHA I, %	15%
NYHA II, %	39%
NYHA III, %	27%
NYHA IV, %	19%
LVEF (%), mean	40
BMI (kg/m^2), mean	28

Co-morbidities at baseline	
Diabetes, %	39%
Hypertension, %	69%

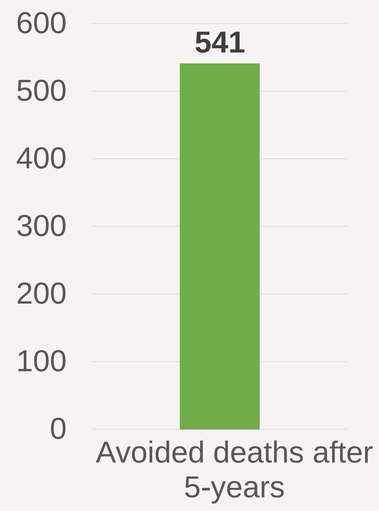
Previous HF medication	
Prior ACEi use, %	49%
Prior ARB use, %	30%

Medical history		
Time since HF diagnosis, %	≤1 year	22%
	1-5 years	32%
	>5 years	46%
Prior stroke, %		14%
Prior atrial fibrillation/flutter, %		55%
Prior angina, %		15%
Current smoker, %		40%
Previously hospitalized for HF, %		41%

Baseline utility	
EQ-5D-3L, mean index score	0.63

Legend: ACEi, angiotensin converting enzyme inhibitors; ARB, angiotensin receptor blockers; BMI, body mass index; HF, heart failure; LVEF, left ventricular ejection fraction; NYHA, New York Heart Association.

Results



- A total of **541 deaths are estimated to be avoided** with sacubitril/valsartan after 5 years, *versus* a scenario with enalapril (**Table 2**).

Table 2. Estimated number of deaths avoided with sacubitril/valsartan after 5 years.

- Similarly, after 5 years of treatment with sacubitril/valsartan, we estimate to have **avoided 2,784 hospitalizations** (705 due to HF, 1,032 due to other cardiovascular causes and 1,047 due to non-cardiovascular causes) *versus* a scenario with enalapril (**Table 3**).

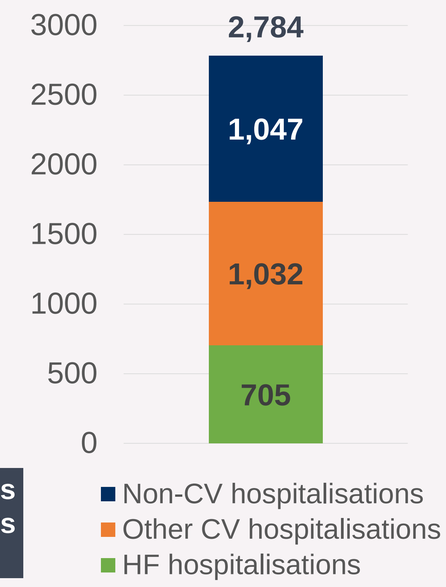
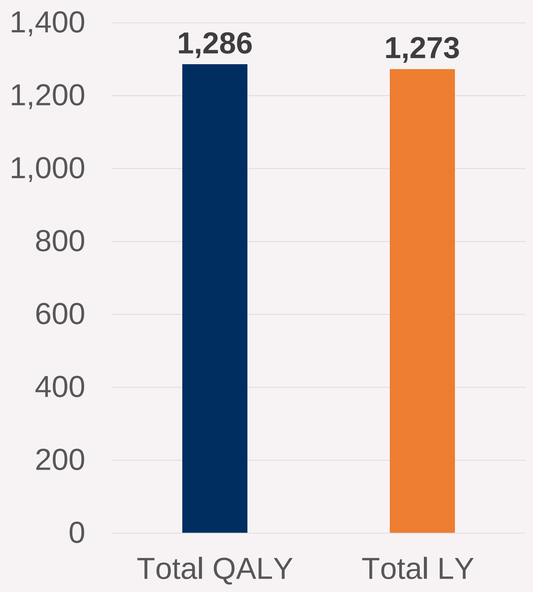


Table 3. Estimated number of hospitalizations avoided with sacubitril/valsartan after 5 years of treatment.



- A benefit of **1,286 QALY** and **1,273 LY** gained over a period of 5-years is also estimated (**Table 4**).

Table 4. QALY and LY gained with sacubitril/valsartan over a period of 5 years.

Conclusions

- Sacubitril/valsartan is estimated to have a high impact on morbidity and mortality in the Portuguese population which is shown by the number of deaths and hospitalizations estimated to be avoided and QALY and LY estimated to be gained in the currently treated population.

References

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Disclosures

M Afonso-Silva and PA Laires are employees of Novartis Farma, Produtos Farmacêuticos SA, Portugal. The authors have no other relevant affiliations or financial involvement.

Disclaimer

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